# *Significant Progress Made*

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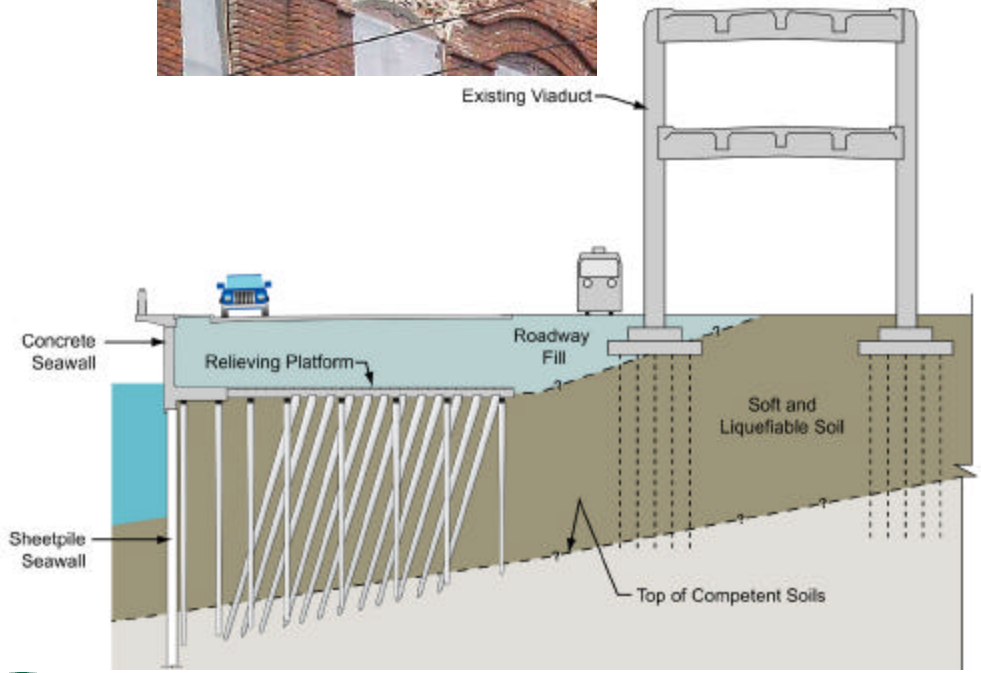
City of Seattle

# An Urgent Need to Retrofit or Replace

## Viaduct in need of replacement

- Constructed in 1953
- Experts say a 1-in-20 chance exists that an earthquake could permanently close the viaduct in the next ten years
- Soils may liquefy
- Structure may fail

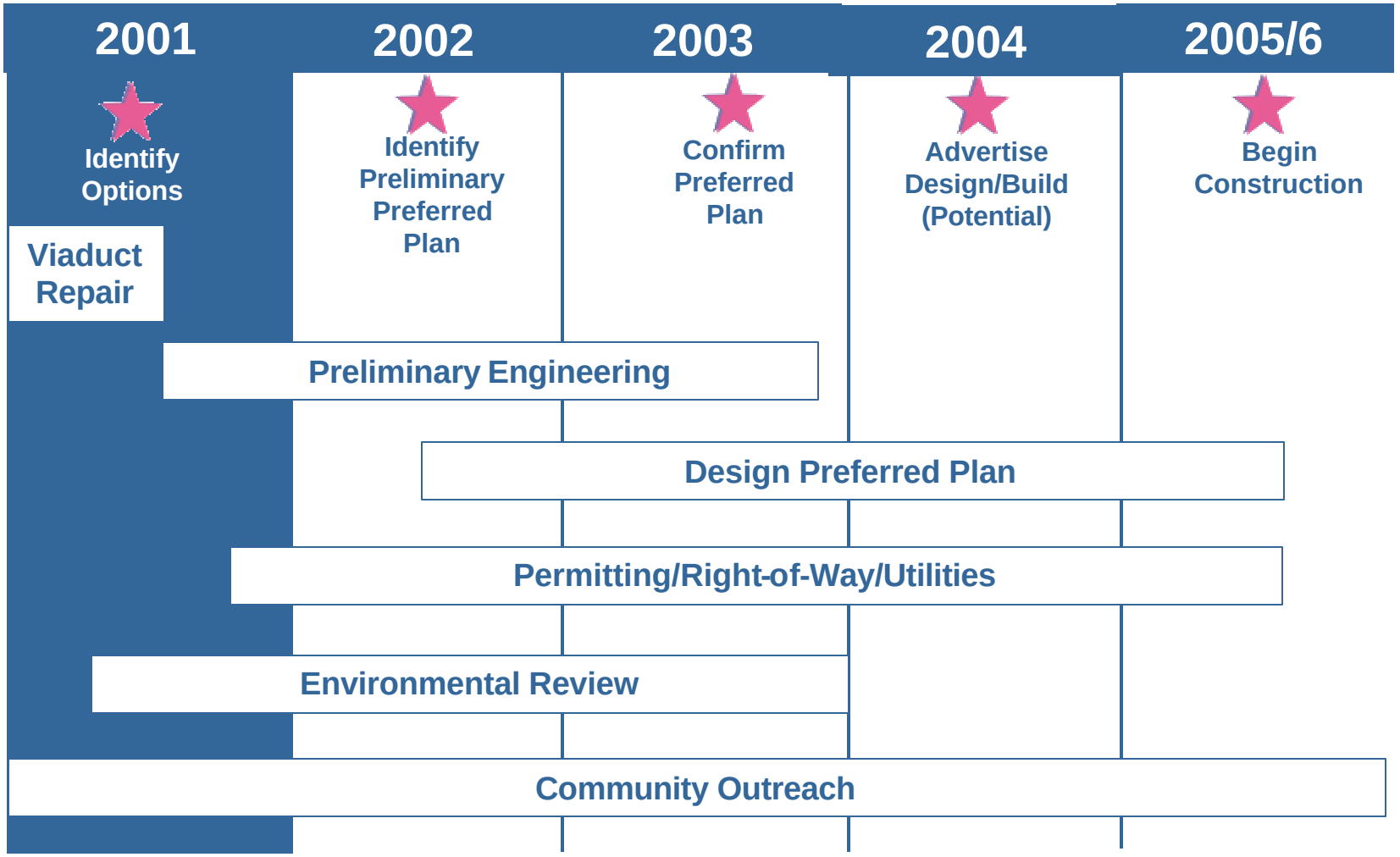



## Seawall is also at risk

- Constructed 1915/1934
- Soils may liquefy
- Structure may fail
- Failure in similar seismic events as viaduct

# Risk to the Viaduct Affects Regional System

# Proceeding on a Fast Track



# Listening to the Community

- Open houses held in November in West Seattle, Downtown, and Queen Anne
- Community briefings ongoing
- Elected officials
- Leadership Group

- Seattle City Council
- Transportation Commission
- King County Council
- Port of Seattle Commission
- Pike Place Public Development Authority
- Ballard Interbay Northend Manufacturing and Industrial Center
- SODO Business Association
- North Seattle Industrial Association
- Pioneer Square Community Association
- Ballard District Council
- Fremont Chamber of Commerce
- Belltown Community Council
- Aurora Avenue Merchant's Association
- Manufacturing and Industrial Council
- Lake Union District Council
- And others….

# Progress Since October 15

## What We've Heard

- Move quickly to address risks of seismic event on viaduct and seawall
- Maintain truck access on viaduct
- Address effects on communities

## Progress Made

- Moved beyond concepts and identified four design plans to be considered further
- Conducted truck study on viaduct – up to 300 trucks per hour. Designing plans to accommodate what we learned about truck movements
- Meeting with property owners, businesses, residents and institutions to discuss design plans

# Progress Since October 15

## What We've Heard

- Improve transportation choices on waterfront
- Integrate solutions for viaduct and seawall
- Integrate viaduct solutions with potential fixes to 'Mercer Mess' and Seattle Center area

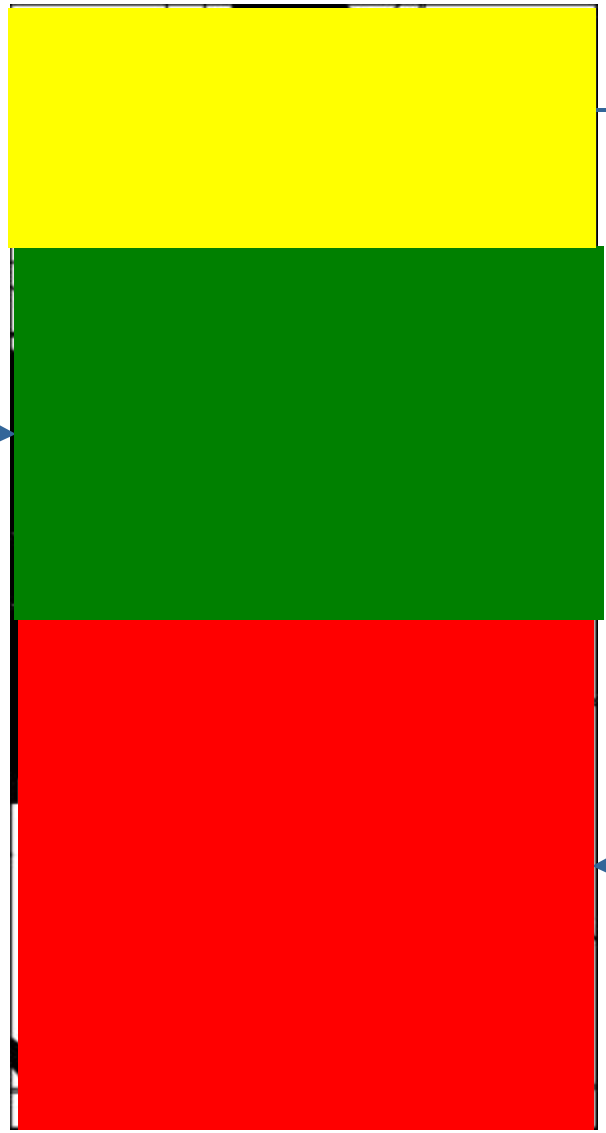
## Progress Made

- Linked design plans to transportation choices in the corridor – pedestrian, bicyclists, ferries and transit
- Continued identifying vulnerabilities in the existing seawall and defining plans for retrofitting or replacement
- Designed plans to accommodate future transportation 'fixes' in the south Lake Union area

# Progress Creates Opportunities

- Opportunity to increase transportation access and choices throughout the corridor
- Opportunity to redefine Alaskan Way right-of-way
- Opportunity to make better physical activity linkages to different neighborhoods
- Opportunity to improve the environmental conditions along the corridor

# Progress Creates Opportunities



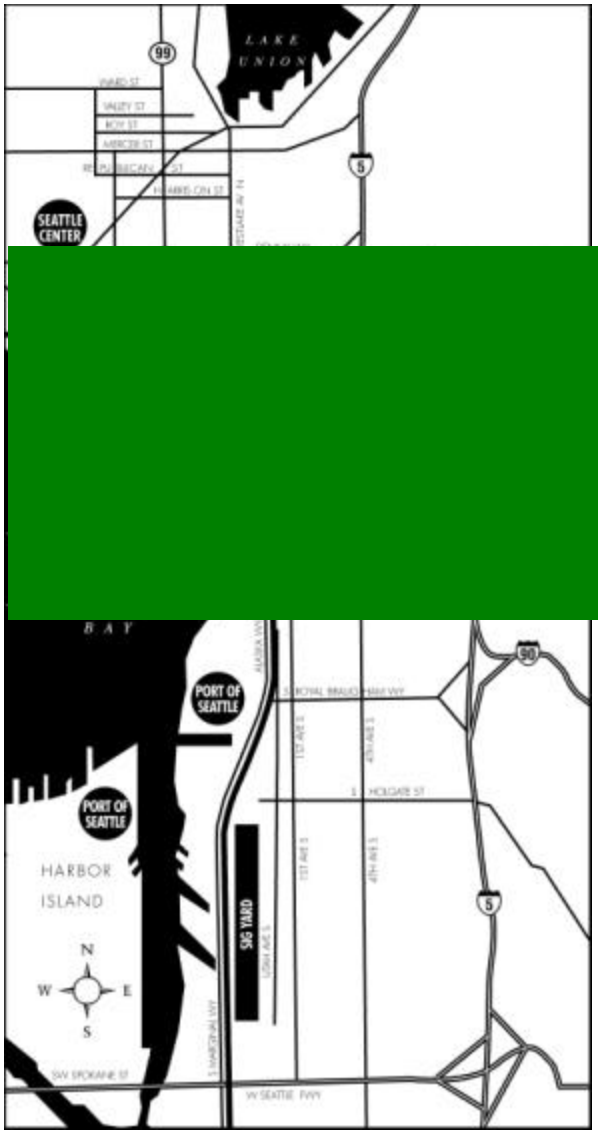
North

Central

South

# Central Waterfront Opportunities

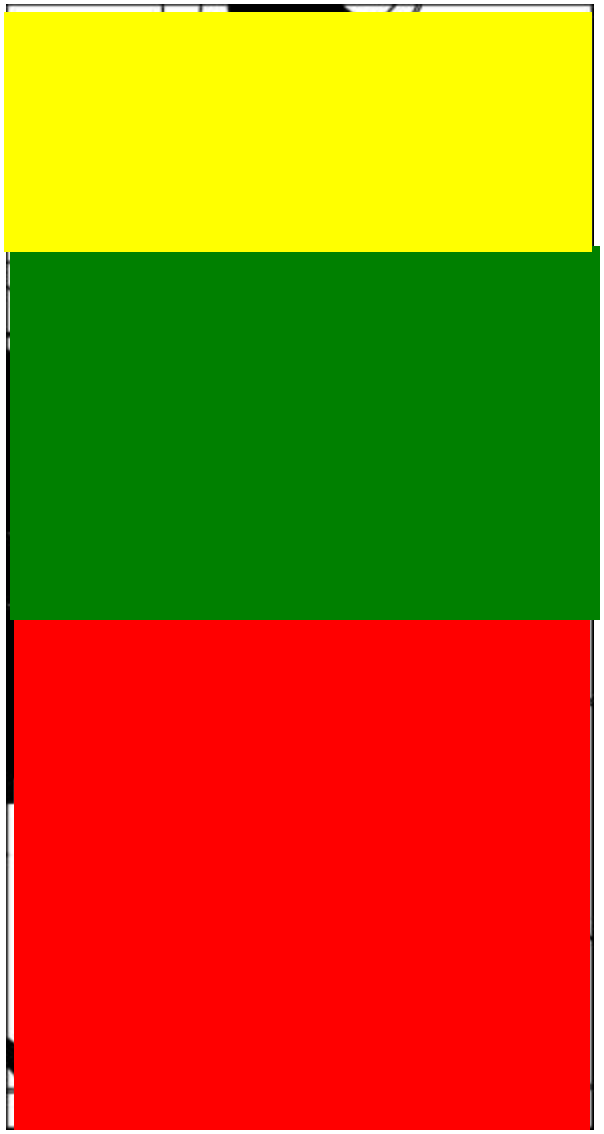
- Improve safety for pedestrians, bicycle, and vehicular traffic
- Integrate with potential transit improvements
- Improve access to and from downtown
- Increase open space and improve transit access to waterfront




- Improve ferry access for pedestrians and vehicles
- Address building viaduct and seawall at the same time

# North Area Opportunities

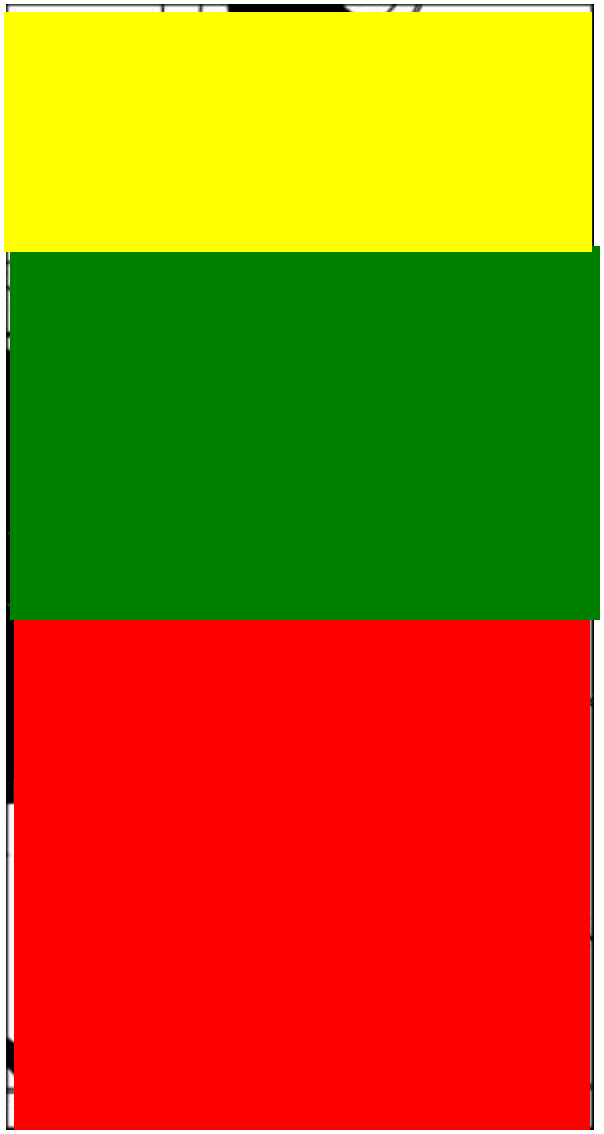
- Reconnect street grid
- Integrate with potential improvements in the Mercer Street corridor
- Improve access to and from South Lake Union and Seattle Center area



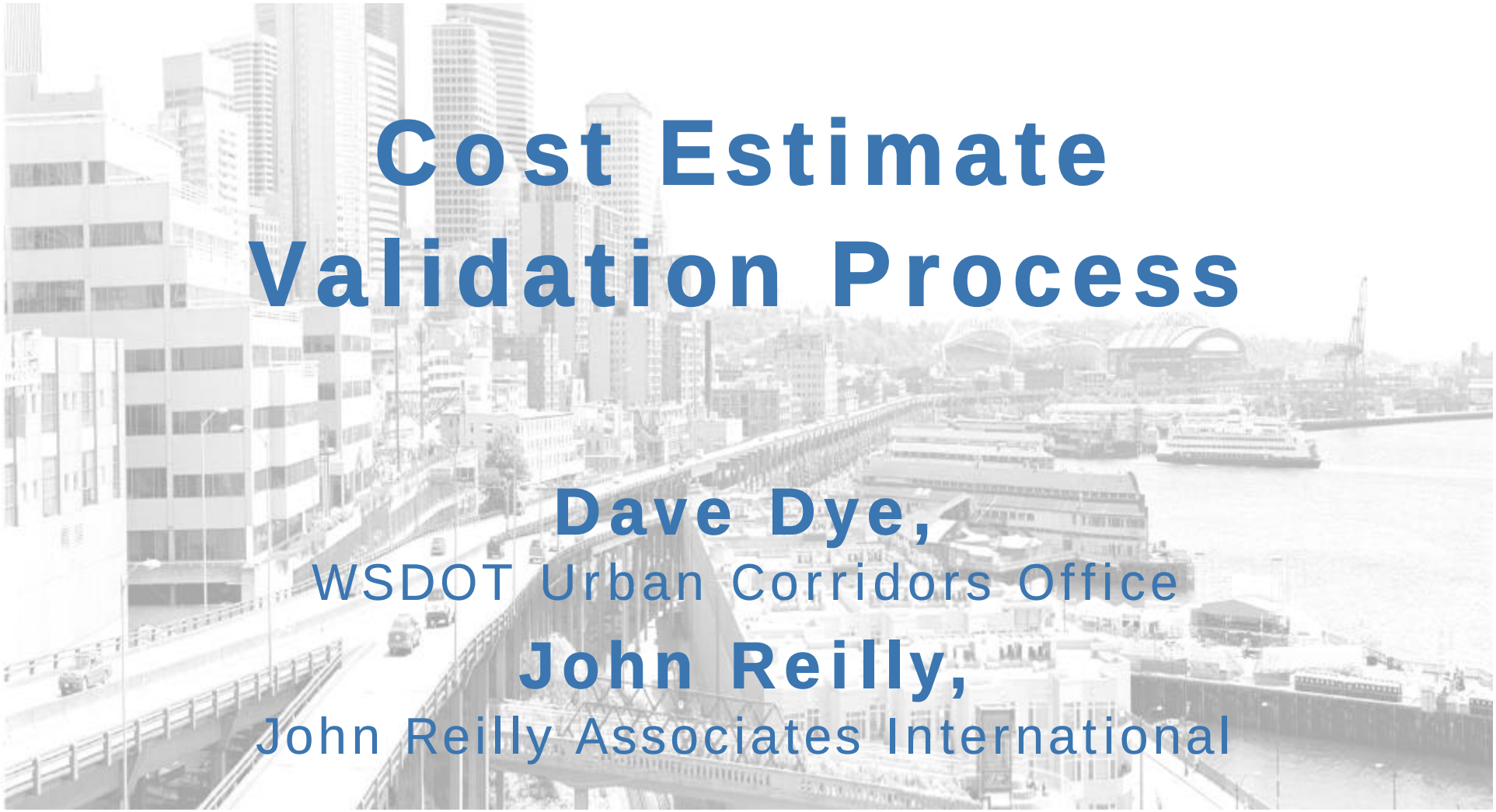
- Improve access to Ballard/Interbay
- Reuse Battery Street Tunnel to extend waterfront streetcar or for local access

# South Area Opportunities

- Improve freight mobility – Interbay, Duwamish, Port of Seattle, south King County
- Improve access in the stadium area



- Provide for better bicycle, pedestrian and transit access between the stadium area and the waterfront
- Improve connections between SR 99 and Spokane Street



# Cost Estimate Validation Process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# Project Estimating 101

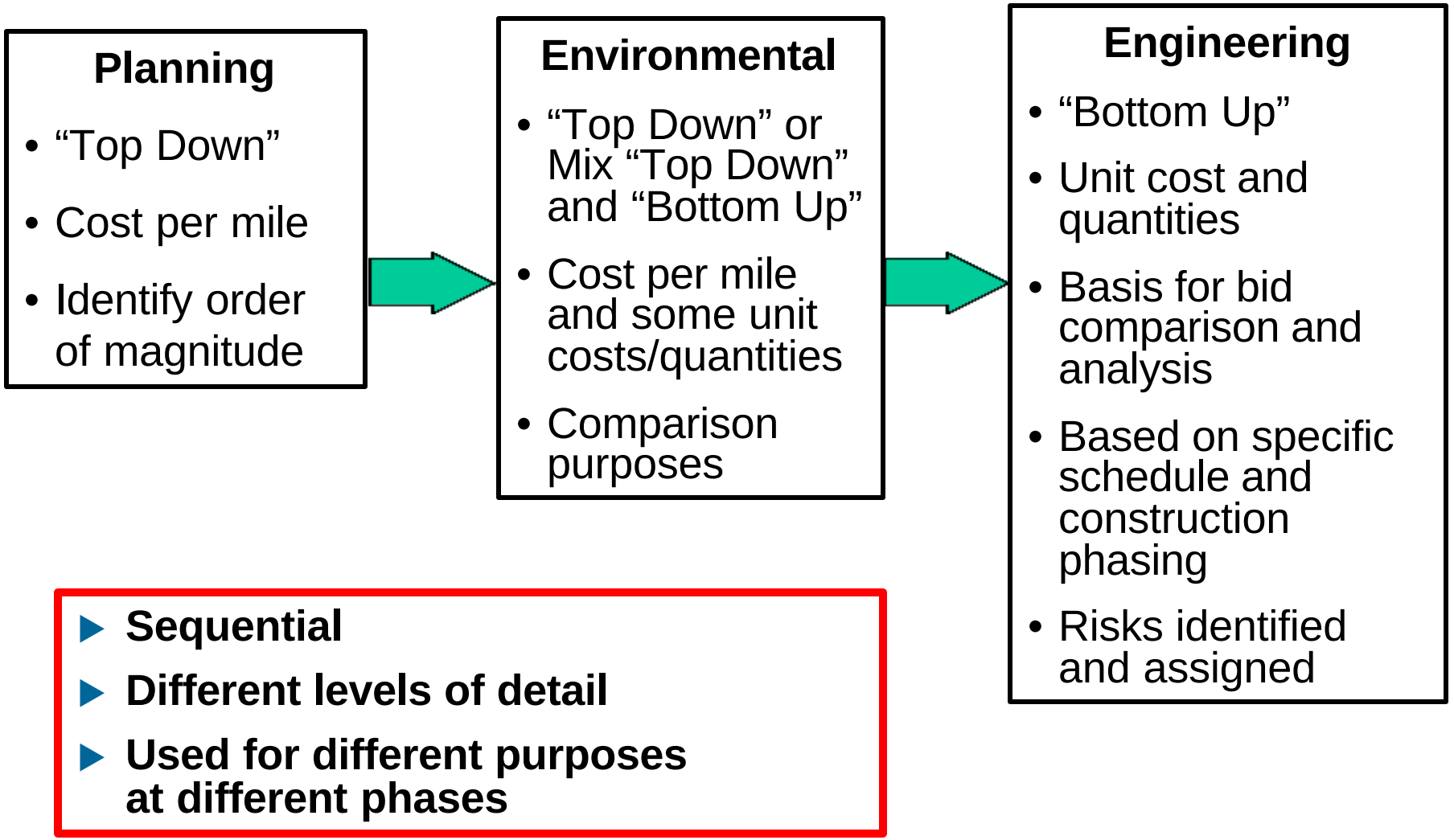
Presentation will cover:

- Variability of cost
- How are estimates usually done?
- What do we need to do to get a good estimate?
- Need a reliable cost estimating/validation process
- Must evaluate risk and variability using statistical (probability) methods

# Variability of Cost

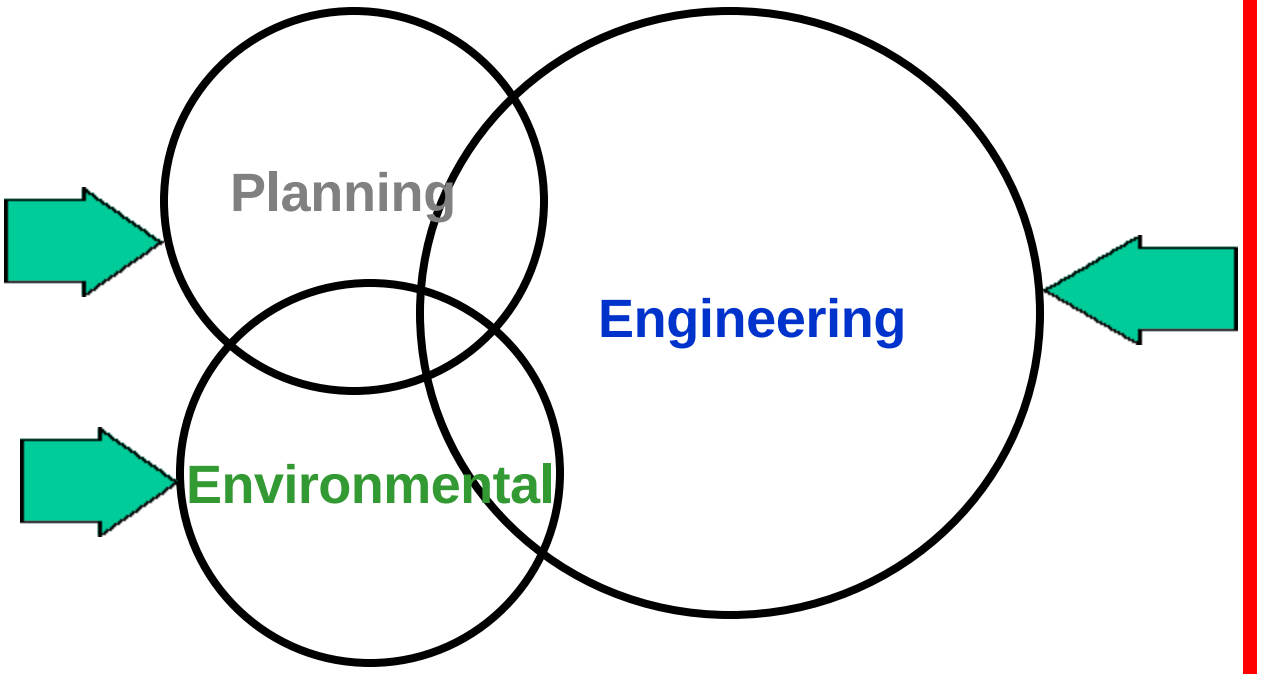
- Actual project cost is subject to many variables, creating a range of “probable projected cost.”
- Any single cost number represents only one possible result, depending on the variables and assumptions.
- Variables are not all directly controllable or absolutely quantifiable.
- Cost estimating must consider probabilities in estimating cost, using a recognized, logical and tested process.

# How are Estimates Usually Done?




- **Sequential**
- **Different levels of detail**
- **Used for different purposes at different phases**

# How Do We Get a Good Estimate?




1. Integrate planning, environmental and engineering processes
2. Advance high-risk engineering items
3. Identify and quantify items that also affect project cost:
   - Politics
   - Environmental
   - Schedule and phasing

# Two Key Actions

- First:

  Develop a cost estimating and validation process to ensure that cost estimates are reasonable, defendable and sustainable.

- Second:

  Implement project and program management systems to ensure on-time, on-budget delivery of WSDOT mega-projects.

# Cost Estimate and Validation Process

- WSDOT is now developing a uniform Cost Estimate Validation Process (CEVP)
  - Peer review panel of experts (national)
  - Review project cost estimates
  - Identify high-risk project items
  - Develop protocols to enhance estimating practices
  - Introduce risk, variability, and statistical probability into estimating

# Introduction

- Emerging national and international strategies about the management of cost, schedule and risk for complex projects
- Management systems:
  - relationship contracting (alliancing)
  - dispute resolution
  - risk mitigation
- Need to add cost estimate validation

# Key Project Requirements

- Public understanding and acceptance of the project – "buy-in," support
- Funding – availability, stability
- Ability to set a realistic budget and schedule
- Ability to meet a realistic budget and schedule

# Key Factors

- Geological/physical
- Technical/configuration
- Constructability
- Funding and budgets
- Stakeholders

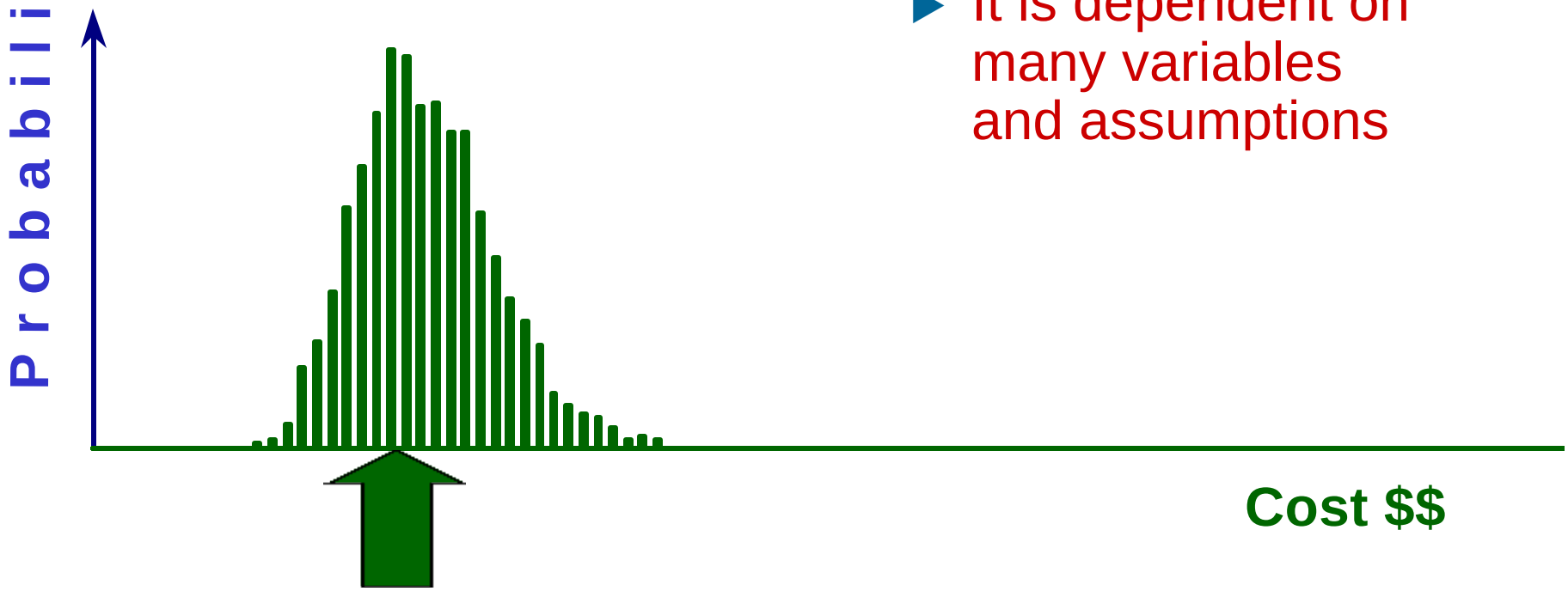
- Management system
- Contractual approach
- Personnel (capability and continuity)
- Leadership, teamwork

- Contracting environment
- Public support
- Random/risk events
- Political (transitions)

# Developing Cost Ranges

Expect a range of possible costs

Probability of a particular cost




Most probable construction cost

- Any cost number represents only one possible final result
- It is dependent on many variables and assumptions

# Risk and Variability – A Process

- Risk and variability always exist in large, complex infrastructure projects
- A significant number of projects have overrun budget and schedule by what have been called "unforeseen" or “unanticipated” events
- What does it take to “anticipate” these “unforeseen” events?
- Time? Expertise? Money?
  A structured risk-mitigation process?

# Example: London – Jubilee Line Transit

- The project was:
  - 2 years late
  - $1.9 billion over budget (~25% overrun)

- Report of the Government Advisors
  - "Time and cost overruns could have been minimized **with a more established strategy at the very beginning of the project**".
  - "London Underground …**lacked the strategy, structure and continuity of management** to ensure the delivery of a working railway."

# Risk Identification Workshops

- Risk workshops allow the project to evaluate and mitigate potential problems
- Risk workshop process:
  - Identify potential impacts
  - Estimate probabilities for each impact
  - Risk = impact x probability
  - Develop risk reduction strategies
  - Determine cost/benefits for these strategies
  - Decide a prudent course of action

# Complex Projects

- Big projects are consistently more complex than initially envisioned

# Staying on the *Fast Track* – Next Project Steps

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# Next Steps

- Continue to develop design plans
- Identify a preliminary preferred design plan June/July
- Cost estimate validation results
- Continue community outreach – upcoming open houses
  - Downtown – February 25
  - Burien – February 26
  - Ballard – February 27
  - West Seattle – February 28
  - North Seattle – March 5
- We need you!
  - Talk to the groups you represent
  - Suggest who else we should be meeting with
  - Distribute project information at your events
- Thank you